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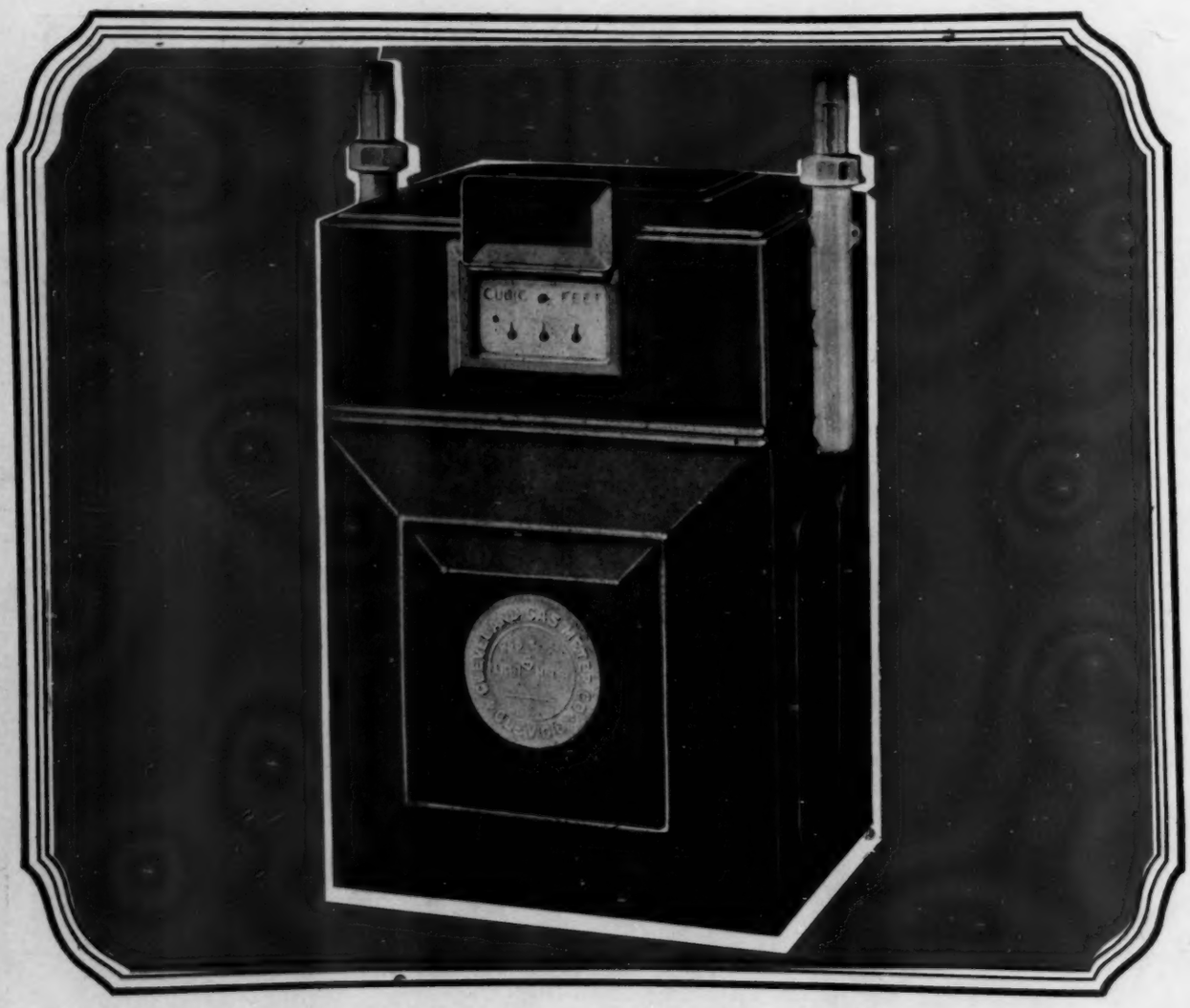

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SIXTY-SEVENTH YEAR

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AMERICAN
GAS JOURNAL

Vol. 123. No. 27 NEW YORK, DEC. 5, 1925 Whole No. 3553

Laying a Gas Main Across the Hudson

Details of an interesting distribution job

Geo. H. Smith

Gas Engineer, Central Hudson System

THE laying of a four-inch gas line 9,081 feet in length across the Hudson River, connecting Newburgh and Beacon, N. Y., involved a number of problems which will be of interest to gas engineers. It was necessary to take into account heavy river traffic, anchorage, pipe corrosion due to brackish water, pipe joints, avoidance of undue strain while laying pipe, allowance for settling into silt at the river bottom, drainage of condensation and many other questions, as well as the economy of an interconnection of this kind, as against increasing plant capacity at Beacon.

How these problems were solved will be discussed in this article. No attempt is made to discuss operation except as has been anticipated in the design, as no experience data are available as yet, since at this writing the line has not been in use.

Economics

The great urge that made this project a desirable undertaking was one of economics. On the Beacon side of the river was a small gas plant facing a program of extensions, including the possibility of a new holder. On the Newburgh side we had in operation a plant with sufficient generating capacity to supply both districts for the immediate future, with the possibility also of additional holder capacity. The combined construction program would have involved an expenditure far in excess of a program of interconnection. Furthermore, the fact that placing the storage capacity for Beacon in a new holder for Newburgh was a cheaper way of getting storage capacity for both districts.

The further production economies involved in making the gas at one point made this project desirable and, accordingly, after examining and analyzing all the contingencies of submarine work, the construction was authorized and proceeded with.

Government and Municipal Permits

Before beginning a project of this kind it is necessary first of all to establish the route over which the line is to be built. Such consideration as avoiding private rights of way, paved streets, etc., should be carefully considered.

The Hudson River is of course a navigable stream and in selecting the river crossing it would have been to our advantage to be as near as possible to the ferry lane which connects Beacon and Newburgh so as to avoid as far as possible the probability of boats anchoring and fouling the line. To be in the ferry lane, however, involved considerable expense in making landings and we, therefore, crossed the river some distance south of the ferry, but in a part of the river where experience has shown that little anchoring was done.

River Crossing Permit Obtained

After the route was established, it was necessary to obtain permission from the Government on the river crossing, including dredging at the pier heads, also the general consent of the abutting property owners, also required by the Government, and leases for private rights of way with the general consent of the municipal authorities concerned. In all cases permits, consent and leases were readily granted.

All companies operating river craft were notified of our intention to install a gas main, and schedules of river traffic were examined to determine the best time to cross the channel. As matters worked out, however, the channel was at no time blocked and traffic was at no time interfered with. Regulation lights and signals were, of course, carried on all boats and red lanterns hung on buoys over anchors.

The Project

The project involved the laying of a 4-inch steel pipe, as follows:

960 feet on land in Newburgh.
5700 feet under the Hudson River.
2421 feet on land in Beacon.

Along with this also two high pressure drip pots and a high pressure catch tank were placed at low points in the line; one control valve for automatically controlling the Beacon holder when pumping gas from Newburgh; two compressors capable of delivering 35,000 cubic feet of gas per hour at 50 pounds per square inch; one compressor, engine driven—while the other is a synchronous motor driven compressor, 2 phase, 60 cycle.

The Design of Pipe

A great deal of study was given the matter of pipe, as the water in the locality of the pipe line is brackish and quite salty during low water periods. Consideration was given to cast iron, wrought iron and steel.

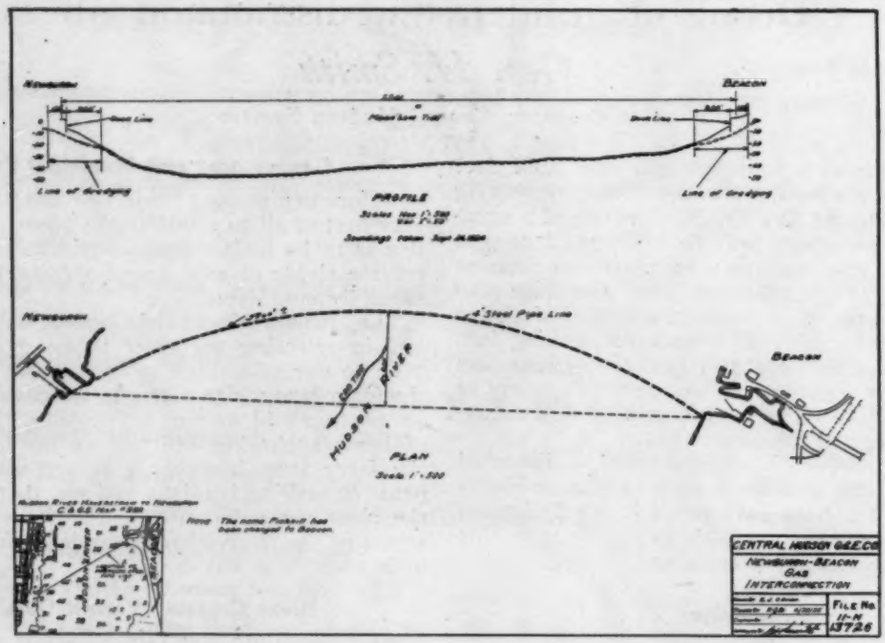
On account of its great strength and superior handling qualities and its cheapness in terms of its relative life, extra heavy double random length steel pipe was specified for the work, both for the land and river portions.

The next problem involved was to determine how the pipe was to be coated. Consideration was given to galvanizing and covering the pipe with some good paint. After examining many different protective coatings, we finally selected a bitumastic enamel which is especially applicable to submarine structure. This coating when applied hot with a brush placed a covering on the pipe from ⅛-inch to 1/16-inch thick and made an excellent coating as to appearance. Its durability is, of course, yet to be tested. The amount of pipe corrosion under water it seemed to us would be very little, as there is a deficiency of oxygen there which is a necessary element. We do expect corrosion, however, at the shore ends, where the pipe is wet and dry, according to the tides. The experience of a great many companies has been that there is little corrosion under water, but there have been cases of pipe wearing thin by sand abrasion and movement in the bottom of sandy streams with the tide in one direction.

Design of Joints

One of the most difficult problems on which to arrive at a conclusion was the question of the type of joint, and in this project the following types were considered:

1. Screw coupling with coupling welded to pipe.
2. Acetylene butt weld with river sleeve.
3. Electric weld with electric welded sleeve.



4. Screw coupling with dresser clamp and river sleeve.

There was some economy presented in the use of welded joints on account of the fact that many lengths of pipe could be made up on shore and this would necessitate the use of marine equipment over a shorter period of time. Electrically welded joints were made and tested and showed up well under test, as did acetylene welded joints.

After a thorough study of many types of joints and a discussion of the same with several engineers in the artificial and natural gas fields, a screw joint was decided upon.

It appeared from all we were able to gather, especially from the gas men themselves, that a welded joint is the best joint when properly made and care-

(Continued on page 616)

The Job Ahead in Selling *

A comprehensive analysis of the domestic sales problem

Robert J. Canniff

EDWARD FILENE of Boston said, "I have always thought that a good business man had to be something of a prophet. He must cultivate the habit of looking ahead, harden himself in the habit of thinking straight from cause to effect, and of thinking impersonally." "Most of my success," said Mr. Filene, "has come about as a necessary part of my attempt to discover, study and understand all the forces, both local and national, that promised to react upon and determine the future of my business."

This statement of a most successful Boston merchant vividly points the way to a solution of one of the most important problems confronting the gas industry, namely, The Job Ahead in Selling.

Men of Vision Must Lead

Why is it so widely assumed in the gas industry that to be reactionary is to be practical, and that to be progressive is to be purely visionary? The acceptance of this assumption is a serious handicap to our progress. If you attempt to diagnose some of the reactionary cases among the personnel of our commercial organizations you very often find that, practically speaking, these individuals seem to have contracted a hard case of sleeping sales sickness. When a sales manager or commercial executive comes to regard his experience as the last word in business theory and practice, one can very often observe indications of dry rot. The sales manager or executive who never regards any policy as final and who is constantly on the alert, hoping that soon he may find some new facts that will revise his theory and change his business practice, is the most practical and progressive commercial man. He is the man doing the big job. Such men of vision are the men to whom we must look for the leadership in solving the job ahead in selling.

Robert J. Canniff

Scientific Handling and Markets

Who of you are capable of saying that the dreams and visions of our competitors today may not again mean the loss of another market to our industry?

"Necessity is the mother of invention." Many of the great advances which man has made are either directly or indirectly the result of necessity; and from such a source have come many of the great inventions and most of the outstanding commercial and industrial achievements of today. What we need most today in our industry is to apply to the development of new markets and new marketing methods the same scientific principles which proved so successful in the field of production.

What is responsible for the rather general lack of initiative and aggressiveness in the development and promotion of new business?

Near Poughkeepsie we have an insane asylum, and as I was passing through the grounds one afternoon my attention was attracted to a great number of men raking leaves. With my curiosity aroused a bit, I chanced to inquire of the keeper if the men were patients, and, to my surprise, he said, "Yes." "Well," I said to the attendant, "isn't that dangerous? I should think you would be afraid of their getting together and overpowering you." "Ah," said the attendant, "that is the reason they are here—they can't get together."

Inability to Get Together

Possibly that's the reason we're here. Possibly that's the reason progress in the industry has been so slow to date. Possibly that's the reason we can observe such a small increase in sales—because we, too, as sales leaders, can't get together on a national policy. Competition today is not within the gas industry itself, but between industries. While we may think we have no competition locally, nevertheless it exists and if you and I are unable to visualize it in its present form something must be wrong. We must be in a rut—one that is so deep that we cannot see over the top—a rut that is so deep it looks like a front line trench, built for shock troops skilled only in the art of defense, with the organized competitive industries attacking co-operatively in full force. What is the objective of these competitors? Undoubtedly it is a greater portion of the consumer's dollar. If they are to continue in their attack and win their objective, then the portion of the consumer's dollar which is being spent with the gas company for equipment and service is constantly going to grow less.

If we are planning a counter offensive, first we must hold the sales volume in our present markets. Second, organize a national drive of co-operative market development employing the military strategy of a Foch and the business strategy of a Theo. N. Vail.

*Delivered at the Tuesday meeting of the Commercial Section, A. G. A. Convention, Atlantic City, N. J., October 13, 1925.

What the Industry Needs

The industry needs—

Men who are willing to dream dreams.

Men who are willing to conduct some commercial experiments, paying for the mistakes, if they develop, but still carry on.

Men who will try once and still again.

Men big enough to co-operate for the advancement of the industry as a whole.

The answer is organized co-operation within the industry to meet the competition of other industries.

What is this organized national competition which we must meet, and how does it operate? Henry Ford has sold over twelve million cars in 20 years, while it has taken the gas industry more than a hundred years to sell six and one-half million customers. This has been done by one man organizing on a national basis.

The Example of the Automobile

The automobile industry has taken their products from the luxury class and convinced the public that the automobile is a necessity of daily life. Their national appeal to pride of ownership has created the feeling that it is stylish to have a motor car. This enthusiasm is maintained by the continuous development of model changes and new ideas. The general public acceptance of this style idea has helped increase the portion of the consumer's dollar being spent for cars. At the same time it is causing the portion spent for gas to decrease.

In three years radio has advanced from the experimental state to the point where there is a radio in nearly every home. It is the style to have a radio for home entertainment.

As soon as the domestic application of gas is harmonized with the social environment of the home you have started a new fad and socialized your presentation to the extent that greater usage will result. How can this be done in the gas industry? Partially through Home Service.

Importance of Home Service

For example, take any company that has a Home Service Department and analyze the present trend. In a company which I visited they are using the very style and fad features which are seemingly getting all the attention of the modern housewife and through this approach they are popularizing gas cookery and selling it in a new way. The radio broadcasting of new recipes and the timeliness of this helpfulness is building a greater sale of gas. Just about the time that the housewife tries to think of something for lunch and is about to give it up and go out to buy either some package foods or visit the delicatessen store, she tunes in on the radio only to get a new thought and soon she is trying it out on the gas range. Home Service is no longer an experiment—it is here to stay. It is one of the new methods we have been looking for to maintain our domestic cooking market.

Radio Broadcasting

There is just as much inventive genius in the gas industry as in any other. We just seem to lack the confidence to put our ideas across on a national basis. There's the case of radio broadcasting. Home service departments of individual companies have been broadcasting radio programs to good advantage—locally. A greater harvest of enthusiasm and resultant gas sales could be reaped if co-operative effort were applied to make radio a national feature of the gas industry. That is what Washburn Crosby is doing with Gold Medal flour, as all you readers of the Saturday Evening Post know from their full-page advertisement announcing radio programs from 15 stations all over the United States on their "kitchen tested" flour. They're using our idea and putting it across by national advertising. Why didn't the gas industry organize a national radio broadcasting program through their home service departments to increase gas usage in the home?

If the gas industry holds its domestic cooking market it must change the present habits in the home. This isn't so difficult an undertaking when you realize that the lemon growers increased their production 100 per cent by showing the housewife new uses for lemons, such as lemon with fish and the like. The same story is true of the orange growers and the raisin growers of California. All this was accomplished through a co-operative campaign of national advertising.

While it is evident that the solution of the job ahead in selling is a national campaign of co-operative advertising, such a campaign will not attain its greatest success unless the industry is entirely sold on the idea and willing to organize locally for an immediate sales follow-up. It is useless to appropriate money for national advertising in magazines and trade papers unless we are in agreement as to policy and procedure and have a definite sales plan for our local operation.

Local Market Possibilities

Think of the possibilities of local market development if the gas company, the plumber dealer and all other dealers handling gas appliances were to organize a business development association for the purpose of creating wider distribution of gas consuming appliances in your local territory. Such a suggestion is not impossible, for other industries have created such organizations and are obtaining surprising results. Inasmuch as our main purpose is to increase our domestic gas load, is it not feasible to enlist the co-operation of all the local distributors of gas appliances in a local campaign, pooling their money for advertising and organizing an in-

(Continued on page 621)

Insulation*

Its importance in the manufacture and domestic and industrial use of gas

L. E. Cover

Armstrong Cork & Insulation Co., Pittsburgh, Pa.

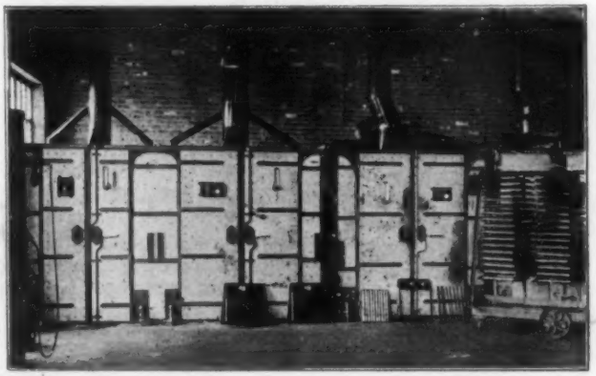
THE insulation of heated equipment to reduce heat loss is by no means a new subject to you gentlemen in the gas industry, and it would seem that there is little of value that anyone could add to the general fund of information you already possess bearing on this subject. Nevertheless, there has fallen to my lot the task of telling you something about insulation that may have escaped your attention or, at least, of presenting the same old story from a different point of view.

In the past few years, mainly through the efforts of the gas companies in educating industrial users to its advantages, gas has replaced coal and other lower priced fuels in hundreds of heating processes. Huge burners in the great industrial centers consume more gas in a day than the average city of 50,000 people, yet experts declare that the surface of industrial gas utilization has scarcely been scratched. The moving force back of this continually increasing use of gas in industrial heating processes is the necessity of applying heat more effectively and more economically. Furnaces, ovens, kilns, boilers and other types of heated equipment have all been improved in design and construction with the same idea in mind. Most of the fuel losses due to faulty design and construction have been gradually eliminated and economy in heating operations is now the rule rather than the exception. But there is one loss which is still much greater than it should or need be, due perhaps to neglect of its importance. That is the so-called "radiation loss." Originally, excessive radiation losses were due to the lack of a suitable insulating material, but this is no longer a valid excuse. We of the insulation industry have kept pace with the general advancement and have provided the present day builders of heated equipment with insulating materials that cut fuel losses, due to radiation, to the absolute minimum.

Importance of Insulation

The question of insulation, however, does not concern itself, in general, so much with the actual saving in fuel—important as this saving is, in this day of keen competition—as with the effect produced by confining the heat generated to points of maximum effectiveness. Reduction in fuel consumption is but one of the ways in which worth-while savings are effected by the use of adequate and proper insulation. The insulated equipment—be it oven, furnace, or what not—is more quickly heated to the required temperature, thereby saving time in operation and increasing the output. It maintains a more uniform temperature, which means a better product. The insulation does away with the necessity for forcing the furnace and overheating in the combustion zone, thus increasing the life of the linings. By reducing the temperature around the heated equipment, much more comfortable working conditions are provided, which results in a material increase in the efficiency of the operatives.

The relative importance of these several items will, of course, vary with the industry, apparatus, location, etc., but it is reasonable and safe to assert that, entirely aside from the actual fuel saved, the combination of the other advantages resulting from properly insulated equipment will make the use of insulation a profitable investment.



Kiln Type Oven, Indirect Gas Heated, Insulated with Cork

To understand how loss of heat from high temperature equipment can be curtailed by insulation it is necessary to consider, for a moment, the theory of heat transmission.

Heat Transmission

Heat has three ways of getting about—radiation, conduction and convection. By "radiation" is meant the passage of heat from one object to another through space.

By "conduction" is meant the transfer of heat from one particle of matter by the impact of the molecules composing the substance itself.

"Convection" is the transfer of heat through the agency of any moving gas or liquid.

In a typical furnace or oven, heat is transmitted from the burning fuel, by radiation and convection, to the inner surface of the refractory lining, through the brickwork or shell of the furnace to the outer surface by conduction and thence to the air by radiation and convection. It can be readily seen, therefore, that if heat could be prevented from getting to the outer surface of the heated equipment it would not be lost in the atmosphere. To approximate that condition is the function of insulation. Materials of low heat conductivity that retard the passage of

*Delivered at the Thursday meeting of the Industrial Section, A. G. A., Convention, Atlantic City, N. J., October 15, 1925.

heat—insulating materials—are placed between the refractory linings and the outer surface of the furnace. Of course, there are no materials known that are absolutely heat proof.

Essential Qualities of Insulation

The qualities essential in an insulating material suitable for gas-fired apparatus of all kinds are:

1—Low heat conductivity at the temperature employed;
2—Convenient form for handling and installing (such as block or brick);
3—Structural strength;
4—Ability to withstand high temperatures;
5—Reasonable in cost.

There are many excellent insulating materials for gas-fired equipment offered on the market today that meet these requirements. The basic material used in the manufacture of most of the better ones is diatomaceous earth, a marine deposit composed of the shells of minute organisms called diatoms which existed ages ago. This material is practically pure silica and possesses an exceptionally high heat-retarding value.

To obtain a convenient form for handling and installing (block and brick form) and also to eliminate the layer formation or cleavage planes of the natural earth, the raw material is pulverized and either mixed with finely ground cork, molded into brick form and fired, or is mixed with long South African blue fibre asbestos and a binding material and molded into blocks of various thicknesses and sizes. In either case, the manufacturing process gives the finished products uniform strength in all directions, enhances the insulating value of the basic raw material and makes available for convenient and economic use one of nature's remarkable insulating materials—diatomaceous earth.

Applications to Gas-Fired Furnaces

Applications of both of these forms of insulation to gas-fired equipment in the industries are legion. Heat treating furnaces, japanning ovens, bakers' ovens, glass annealing lehrs and boiler settings are but a few of the various types of equipment that have been successfully insulated. In every case savings have been made which have more than justified the investment.

A concrete example is in an automobile plant in the Middle West, where 24 gas-fired furnaces are employed for heat-treating automobile parts. A few years ago these furnaces were replaced with the same number of furnaces of more modern design and construction, the walls and arches being insulated with insulating brick. Although the new furnaces were approximately 25 per cent larger than the old ones, operating under the same conditions on the same type of work, accurate meter readings showed that 16 2-3 per cent less gas was used than formerly. The greater efficiency of the new furnaces was further demonstrated by the fact that charts taken from recording pyrometers showed that temperatures in the new furnaces were much more uniform than in the old furnaces.

Insulation in Manufacture of Gas

In the manufacture of gas itself insulation is responsible for great savings in production costs. In water gas sets, oil gas sets and coal gas retorts, maintenance of uniform temperatures in the carbon chambers is of the utmost importance to secure efficient and economical operation. Insulation of the producers and benches assists greatly in keeping temperatures under control and most of the manufacturers of gas plant equipment consequently make use of insulated construction. Another important use of insulation in gas plants is in the mains. Insulation prevents the cooling of the gas to below 900 degrees F., the point at which condensation of tar vapor begins, and eliminates the necessity of shutting down for frequent cleaning. Recently, engineers have experimented extensively with the insulation of gas purifying boxes and the results show great promise. There is still much to be learned, however, about this application of insulation, so I will only mention it here. There are many other advantages of insulation in gas plant equipment, such as greater capacity due to thinner linings, flexible temperature control, etc., with which your engineers are perhaps more familiar than I.

Insulation in Domestic Appliances

Insulation also has an application in the construction of domestic gas appliances. The household range with a well insulated oven is much more economical and more efficient and satisfactory in operation. The makers of electric ranges were forced from the beginning to use oven insulation to offset the high cost of power and so put their ranges on a basis where they could compete with gas-fired appliances. But they discovered that what might be called the "by-products" of insulation helped them considerably more in the sale of electric ranges. The cooler kitchen and the fireless cooker effect in the oven resulting from the insulated construction appealed to the woman far more than the reduction in power bills. Now it is up to the manufacturer of gas ranges to insulate. Of course, some of the better ranges are insulated, but it is my belief that eventually the ovens of all but the cheapest ranges will be insulated. You might say that only a relatively small percentage of gas used for cooking is consumed in the oven, but I believe you will find the woman who has an insulated oven eventually does 75 per cent of her cooking there. This is due to the comfort obtained and the fireless cooker effect mentioned previously.

Insulation in Building Construction

There is another application of insulation, however, that is of still greater interest to the gas industry today, and that is the use of insulation in the construction of dwellings.

How should this seemingly far afield subject interest the gas man, you may ask. Merely in this

(Continued on page 620)

GAS MERCHANDISING

Domestic – Industrial

Ideas for the Man Who Sells

William H. Matlack

HIGH PRESSURE THAT HITS BACK

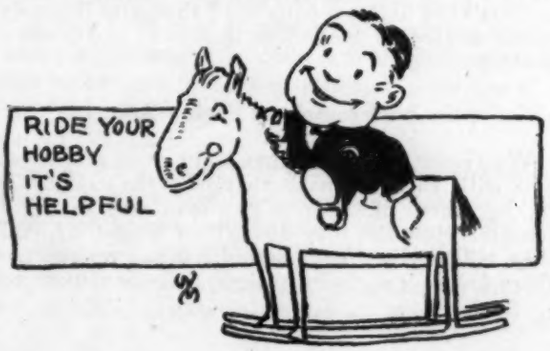
EVERY once in a while we hear some sales manager advance the opinion that the only way to get gas appliances into the home is to use high pressure methods. "Hit 'em hard and often—give it to 'em fast and furious," says this man. "You can't get any sort of volume with easy goin' methods—you have to use plenty of push and pep." In other words, this man's idea of high pressure salesmanship was evidently obtained from a hotel lobby salesman or through some home correspondence course. There are forceful salesmen who, by reason of their having piled up large volume, or making unusual sales, have gained the misnomer of High Pressure Salesmen. Yet this type of salesman

use none of the tactics many sales managers erroneously try to instill in their men with the idea that they are high pressure or persuasive methods. The high class salesman first, and above all, believes in the old axiom: "Sugar will catch more flies than vinegar," and, second, that he cannot cram things down people's throats and hope to go back and sell them again. That is the kind of selling the gas company should not desire from its men. Sell the customer so that he will stay sold, should be printed on every order blank.

Anything that may be done to speed up sales is commendable, if, at the same time, the men making the sales never have to fear facing the customer again. In fact, some of the best salesmen in the industry, considered from every standpoint, have none of the earmarks of the one-time (sometimes called high pressure) men. These men build up a clientele, just as a first-class traveling salesman does, by catering to their customers' wants and trying to create new wants for the customer.

What the One Time Man Will Do

The one time, high pressure salesman can so muddy the water for a public service company, in such a manner and in a very short time, that the company will have to double and treble its efforts to keep new customers on its ledgers and to appease old ones. Just what high pressure, one time, selling will do may be illustrated by what a manager told us recently. We were reminiscing when he said: "You remember all those carloads of ranges that were sold in Blankton last fall? Well, they had to take more than a carload of them back, and they have charged off the books thousands of dollars on account of that sale." The new sales manager tells me that they sold all white enameled ranges with a resale price of $250 for a dollar down payment, and that numerous ranges sold on a low-down payment plan stayed out, without any other payments until they were unfit for resale. Then, when the company finally got around to some folks, they found



that the high pressure man had promised to pay as much as $40 for old ranges during the "speed-up sale."

Many of you who read this will not understand how such a condition could prevail, how any gas company could sell and deliver a lot of perfectly good gas ranges and have them come back on them for non-payment of monthly balances. You could not understand how people could expect to receive as much as $40 for an old, worn-out gas range, or why a salesman would ever make such an offer—yet it has been done and will be done again where high pressure sales are the vogue.

Results of Such Selling

As a rule, the speeder-up comes in for "a special campaign" for ten days or maybe a month. The object of the sales is to sell more merchandise, to saturate existing gas lines and to secure new users of gas service. This, in itself, is fine—but when

the salesman is turned loose he sells here and there, he promises this and that, he turns in orders, and at the end of the sale he gets his commission and is gone. It is then that complaints come in that the regular men have to iron out—special concession promises by the high speed man. That, briefly, is the story of high pressure selling. "How do they get away with it?" you ask. It is simple. The plans are all made for a sale, advertising is started, the men start their canvass, the key customers start to buy, the shop becomes overtaxed, orders pile up, the sales blackboard is the center of attraction, "15 ranges today, 12 tomorrow, 52 this week—we'll go to 200." These are the things that get the interest, these figures and the fact that four people called by 'phone today, wanting to know "when their ranges would be delivered and connected."

That's the high pressure stuff that puts it over and when totaled up spells loss in dollars and cents and prestige.

An Example of Such a Sale

We remember a sale that went over a few years ago with such a smash that half the county was talking about it. Every gas man was asking his friends, "How are they doing it in Bingville? Why, they tell me they have sold 1,500 gas ranges down there in the last three weeks. Salesmen were telegraphing the factory carload orders every day." It was high pressure work, yet eighteen months later this writer saw hundreds of these ranges piled in the yard at the gas works, without cover, exposed to the elements—90 per cent of them came back. And we doubt that this sale, considered from any angle, did the company one iota of good. It was told of one old colored mammy that when the collector for the gas company called on her and asked, "Well, mammy, how do you like your new gas stove?' that she replied, "Well, white man, that is sure a fine thing. You knows, I can just put all my vittals in that there stove and the rats jest haf to leave 'em 'lone."

Another case of where a one time man got his work in was when a gas company decided to bring in a high pressure man to make a canvass of a new main extension. This man came in and was given a commission of $2 for each signer. He secured orders for 143, and when the regular sales force got on the ground they were only able to secure 25 takers. It's the old story of "importation" and is well worth thought for, after all, it is only sales that stay sold that the gas company desires and that truly contribute to solidifying favorable public opinion.

A NOVEL ADVERTISEMENT

J. B. Dillon

TO encourage the writing of advertisements by "amateurs or the laity," the Denver Post and the Zain Ad. Writers are offering prizes to those whose advertisement is deemed worthy of being used. There are about 50 firms listed as co-operating, among them the Public Service Company of Colorado. We herewith reproduce one of the winning advertisements, which explains itself. It is good and it tells the story, in a few words, with an excellent illustration.

If you want merely a gas advertisement erase the words "and electricity" and you have it. If you want one for your combination power plant, here it is.

As The Journal Views It

A COMMUNITY WELCOMES HOME A GAS EXECUTIVE

Times have changed! It is, indeed, a far cry from the attitude of the average community toward the gas company immediately after the war to the spirit that was manifested recently at a testimonial dinner given to a returning gas executive. Miss Mary E. Dillon, the well-known manager of the Brooklyn Borough Gas Company, was accorded last Wednesday a most gratifying and sincere welcome by the entire community of Coney Island, which is served by that company. That all the citizens, as represented by the clergy, business men, professional men, educators, as well as those who are prominent in political affairs, should have assembled to express their pleasure at Miss Dillon's return from abroad is surely a commentary on the progress that has been made by that company in developing good will among its customers.

RUBBER IN THE GAS INDUSTRY

It is a common fault to arrive at conclusions after a mere superficial examination. It is a great deal easier to make snap judgments than to sit down and ponder over the matter, weighing all the pros and cons, and then come to a really well-founded decision. This applies as much to inanimate things as it does to human beings. How often have we decided that we did not care for a particular person because of the way he or she might have appeared to us, or what they might have worn, or what slight mannerism they might have shown, only to find on closer observation and further acquaintance we are often entirely wrong in our first opinion. How often have we examined a machine or a substance that had been recommended to us for a certain purpose and decided off-hand that it would never do, where what we should have done should have been to subject it to a fair test before forming our conclusions.

Accordingly, the average gas man might well arrive at an unfavorable decision if he were asked off-hand whether he thought that rubber could find a use in the gas industry as a jointing material. The first thought that would come to his mind would be that the rough treatment to which the rubber would be subjected and the corrosive influences with which it would come in contact would destroy it very rapidly so that it could hardly be worth while under any circumstances to use it in jointing distribution systems.

But those gas men who have thought it worth while to delve more deeply into this matter have found the contrary to be true. Rubber seems to be able to stand up against all mechanical and chemical influences which have so powerful actions on substances in general that are used in distribution systems and around the gas plant, and this resistance is not only of a temporary character, but—one might say—almost permanent. Rubber has been used for a great many years, comparatively speaking, in both English and Continental gas systems. It has been employed as jointing and packing in making joints in gas mains and pipes. Even after a sojourn of more than 40 years in the pipe joints, the rubber rings that have been removed have shown remarkable resiliency and elasticity.

Here is a fine example of a case where a quick decision would have led the average person who is concerned with such affairs to state that it was impracticable to use rubber as jointing material, while a real test would show conclusively that it was a most remarkable substance for this purpose. We all know that rubber makes tight joints wherever it is used. The rubber ring inserted in the tops of jars for preserving fruits and vegetables, etc., makes air-tight stopping. Thus it is not really surprising to find that rubber, when used in a properly designed joint on the gas main, gives a system that is absolutely tight.

Thus it appears again that that most wonderful substance, the coagulated milk, obtained from a tree, thereafter vulcanized with sulphur or, in other words, vulcanized soft rubber, is able again to show its value and to demonstrate that it can render still another valuable service to industry. Rubber, for

which there are a thousand and one uses, will here find a hearty welcome, such as it deserves and such as it has been its wont to get, in whatever field it has been applied. The gas man is advised to look into this matter conscientiously and carefully, for he will find that rubber will be of material aid in solving the leakage problem in distribution.

LAYING A GAS MAIN ACROSS THE HUDSON

(Continued from page 608)

fully handled and strictly supervised, but that a great deal depended on the welders themselves and on extreme care in supervision.

The Welded Joint

There was some doubt in our minds as to the welded joint standing up under the rough handling of deep river work and withstanding the laying strains so that, all things considered, we did not feel that welding was the joint for this project, although we do believe that in the next few years welding will probably supplant most other joints in steel pipe construction. Were this a land job there is no doubt that welding would have been done throughout.

Our choice of joint for the river portion was that indicated as No. 4 above. We used a standard screw coupling, over which was placed a special dresser clamp with special gaskets for screw couplings. Over the standard coupling and dresser clamp a cast iron river sleeve was placed which was used to take the laying strains off the joint, as well as to act as an anchor for the pipe in the bed of the stream.

As a joint compound, litharge and glycerine was used and in the entire river length of pipe only one coupling leaked under a 100-pound air test.

Field Tests

All the pipe couplings were tested for 100-pound per square inch with air. The marine joints were tested by placing the screw coupling under a 100-pound test before the clamps were placed thereon and before it was lowered into the river. The test consisted of the usual soap suds test, while the joint was under pressure. The air pressure for each test was carried back to shore so that a split pipe could be easily detected.

Drainage and Condensation

The question of condensation in the river line was given a great deal of consideration. The question of a drip line from the lowest point to shore, to be placed inside the pipe, was considered and abandoned on account of the fact that this low point is over 1,000 feet from shore and then again there may be several low points after the pipe reaches final settlement.

The final arrangement on drainage was to place a drip pot near the shore line of the river on the sending side, and on the receiving side to place a drip tank of sufficient size to catch the entire contents of the river pipe were we able to dislodge accumulation of drippage.

Use of Compressors

We installed compressors of sufficient size to push water and gas across the river, with pressure high enough to dislodge any accumulation of condensation. The nominal operating pressure on the line is about 15 pounds per square inch, while the reserve pressure is 50 pounds per square inch.

We anticipate that in winter the gas will assume a temperature in its passage from the plant to the river almost that of the river bottom, so that little condensation would occur if the gas is saturated at these temperatures. In the summer time, however, the gas may assume a temperature somewhat higher than that under the river and some condensation may occur. We are assuming also that in pumping the gas up to the operating pressure that a large amount of the moisture will be dropped out in the compression tank at the sending end. One method considered in taking care of condensation was to sink a large cast iron stand pipe at the shore ends. This involved such an expense and so many contingencies that it was finally abandoned.

Size of Pipe

The selection of the size of pipe was determined from a load study of the gas demands at the receiving end over a period of years. This involved a determination of the maximum days that would occur and the dividing of these maximum days into the hourly sendouts. All this was obtained from a study of past conditions and an estimate of the future as based on the past.

The present consumption of gas is about 156,000 cubic feet per day, with a maximum hour of about 15,000. The pipe size was made large enough to allow for future growth and to supply the demands direct from the pipe line into the distribution system were it necessary to make holder repairs, which it is anticipated will soon have to be done. The question also of a loss of pipe capacity due to condensation was considered and a 4-inch pipe finally decided upon.

Construction Methods

The method of laying the land portions of the pipe was that now used as standard practice in laying steel pipe, with the exception that the joints were the ordinary screw couplings instead of welding, as we felt that the same construction should be carried throughout rather than set up welding equipment for the small amount of land work involved. The landing points and a straight line between them were established. The routing then called for placing in the line a bow to the north about 800 feet off the straight line at its middle point and perpendicular

(Continued on page 623)

INDUSTRIAL GAS LESSONS

IF IT'S DONE WITH HEAT YOU CAN DO IT BETTER WITH GAS

Lesson No. 97

Heat and Change of State

HYGROMETRY

The industrial gas engineer should also understand the principles of hygrometry, for there are times when he is obliged to take into consideration the percentage of moisture in the atmosphere and its effect on the product that is being heated in the industrial furnace.

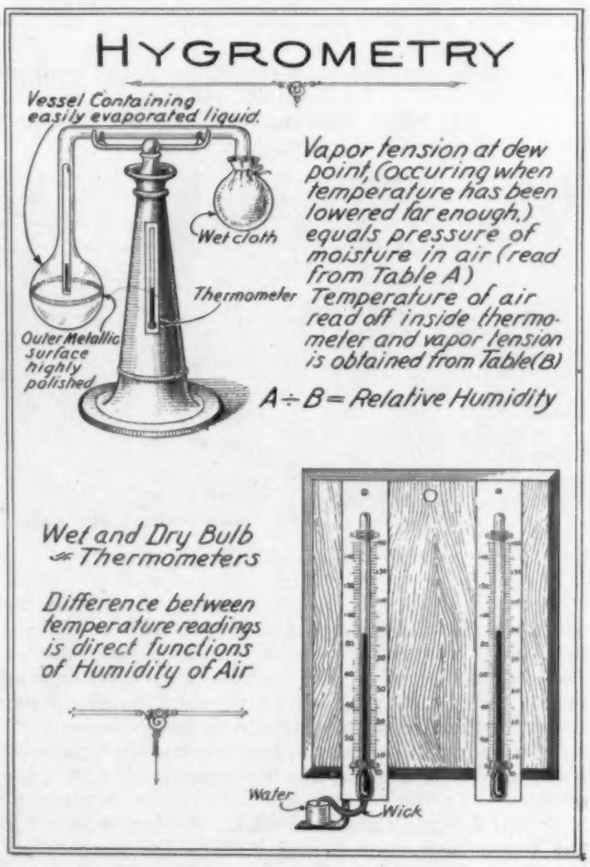
The atmosphere always contains a certain proportion of moisture. At a certain temperature the air can contain a certain maximum amount of water vapor. If this amount of water vapor is increased in any way, then precipitation takes place and the excess water vapor is deposited in the form of liquid water. This temperature is called the dew point, or that point at which the vapor, water, is removed from the air in the form of the liquid, water.

Hygrometry is simply that branch of physical science which treats of the determination of the amount of water vapor present in the atmosphere.

Humidity of Air

The humidity of air is a term which is frequently employed in hygrometry. It simply refers to the fraction of moisture that is present in the air on the basis of what is required to saturate it. Thus, if the air contains 60 per cent humidity, it is indicated that the air at that stage contains 60 per cent of the total amount of moisture that it can hold at the temperature at which observation was made. The importance of the humidity of the air is apparent when considering the drying action of the atmosphere. The more humidity the air contains the less the amount of water it can absorb unless its temperature is raised. Temperature and humidity are directly and intimately connected. As the temperature rises the humidity decreases. For the higher the temperature of the air the more moisture it can hold before saturation takes place. Thus warm air holds more moisture than cold air and when warm air, which contains considerable moisture, is cooled down, the water vapor is precipitated in the form of mist, fog or rain. It is understandable that in figuring a drying operation in which air is used to remove moisture from various substances, the dryer the air the more moisture it will absorb from these substances and, furthermore, the higher the temperature of the air the more moisture will this air absorb.

A few figures may illustrate the importance of this matter. Thus air at a temperature of zero degrees C. can contain a maximum of 4.8 grams of water per cubic meter of air, but it will hold 30 grams at a temperature of 30 degrees C. Or one kilogram of air saturated with moisture contains at zero degrees C. 3.75 grams, at 20 degrees C. 14.33 grams and at 30 degrees C. 26.18 grams.


HYGROMETRY
Vessel Containing easily evaporated liquid.
Wet cloth
Thermometer
Outer Metallic Surface highly polished
Vapor tension at dew point, (occuring when temperature has been lowered far enough,) equals pressure of moisture in air (read from Table A)
Temperature of air read off inside thermometer and vapor tension is obtained from Table (B)
A ÷ B = Relative Humidity
Wet and Dry Bulb Thermometers
Difference between temperature readings is direct functions of Humidity of Air
Water
Wick

The Dew Point Hygrometer

The instrument that is employed for determining the relative humidity of air is called the dew point hygrometer. This instrument is seen in one form in the accompanying illustration. The instrument consists of a vessel which contains a volatile liquid which can be easily evaporated and cooled. This is seen to the left of the device and a thermometer is stuck into this liquid. The metallic outer surface of the vessel is highly polished. As soon as the temperature has been lowered to the dew point a mist is formed on this surface. The vapor tension which corresponds to the dew point gives the actual vapor pressure of the moisture in the air. This is divided by the vapor temperature corresponding to the temperature and yields the relative humidity. Tables must be used which give the vapor tension of water at different temperatures.

The Wet and Dry Bulb Thermometer

Another form of instrument, which is perhaps more familiar than the one just described, makes use of two thermometers mounted together on a single piece of board. The bulb of one of these thermometers is surrounded by a piece of moist cotton or a muslin wick, the other end of which dips into water. The constant evaporation of the water on the surface of the thermometer results in the lowering of the temperature. The difference between the readings on the two thermometers is a direct function of the relative humidity and the temperature of the air. This difference is then used for determining the relative humidity of the air by consulting a suitable table.

An All Gas Home

Built and owned by a gas man

THE residence shown in the insert is one that is just nearing completion and it is to be truly an "All Gas Home."

Designed by Walter N. Custer, architect, and erected by George Maier & Bro., builders, the home is of the Dutch Colonial type and is beautifully situated in a grove of oak trees overlooking the Cohansey River.

Of interest to gas men are some of the modern appliances that find a practical use there.

The gas lighting fixtures were specially designed by R. E. Ewing, of the Welsbach Company.

The House in Qucstion

Roberts & Mander Stove Company furnished the all white enamel Quality gas range, with oven heat control, for the all-gas kitchen, while the architect saved the cost of a flue opening by specifying an Acme flue filter, which was supplied in aluminum finish by the Commercial Gas Appliance Company.

The General Specialty Company supplied the gas iron, which is used with the concealed wall case outfit.

A No. 4 Ruud furnishes all of the hot water for the three bath rooms, and Radiantfire heaters by the General Gas Light Company are used in the two fireplace openings for the living room and sun porch.

The laundry is completely equipped with a mangle and clothes dryer, and wherever it has been possible to use gas a suitable appliance has been installed.

But probably of most interest to the gas men and the sales representatives who get in that section is the room under the sun porch. Acting upon suggestions of Mr. Curley, of the American Gas Journal, this will be distinctly a gas man's room, and only photographs of friends or pictures representative of the gas industry will appear there. The idea, to say the least, shows the faith and love this gas man has for the utility which he represents.

The owner of the gas home is Jacob B. Jones, manager of the Bridgeton Gas Light Company of Bridegton, N. J., and we have it on most excellent authority that anyone connected with the gas industry is always welcome.

NEED GAS TO MAKE NEW FLAKED GLASS

The manufacture of flaked glass for use in office partitions and windows has within a few years become an important industry, and is based upon the use of automatically controlled gas heat.

The process is similar to that employed by the American Indians in making flint arrow-heads. The flint was shaped by heating the stone and dropping cold water upon it, each drop causing a chip of stone to fly off because of the sudden contraction caused by the water.

The glass to be treated is first sand-blasted. This produces a milky, frosted surface. The glass is then coated with glue and subjected to a gradual drying process in a gas-fired oven. Absolute control of the heat is essential, for which reason gas fuel is used. The drying, which takes about 12 hours, causes the glue to contract, and this in turn causes the glass to shrink and shrivel off in flakes.

It is estimated that each square foot of flaked glass produced requires the burning of five cubic feet of gas.

PROGRESS IN GAS TECHNOLOGY
Domestic and Foreign

GAS SCRUBBERS

THIS apparatus is particularly suitable for scrubbing the acid mist resulting from the evaporation of sulphuric or other acid. The casing 1 contains scrubbing plates, 8, 9, spaced apart by a grid 10 and held in position by frames, 13, 14. The perforations 16 in the plate 8 are small to provide for the maximum pressure drop and maximum velocity through the first plate, and the perforations 17 in the plate 9 are large so that the pressure drop is small.

Fig.1.

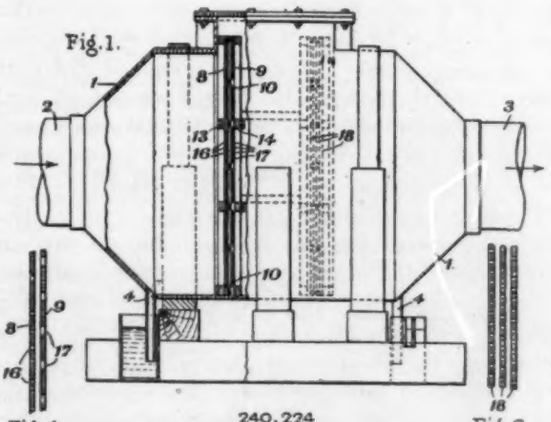


Fig.4.

240,224

Fig.6.

The perforations are staggered so that the gas passing through the plate 8 impinges against an unperforated portion of the plate 9. The perforations 16 may be 1-16 inch, and the perforations 17 may be ⅛ inch, while the plates are spaced 1-16 to ⅛ inch apart. A number of supplementary baffle plates 18 are also provided, having perforations 27 spaced ⅛ inch apart, and staggered in successive plates.

The gas passes through the casing from the inlet 2 to the outlet 3. The plates 8 and 9 cause the liquid particles in the gas to agglomerate, and these plates together with the plates 18 collect and separate the liquid particles, which flow out through the drainage pipe 4. The pressure of gas supplied to the scrubber may be 4-8 inches of water, so that the velocity in passing through the first plate is 40-150 feet per second. The greatest efficiency is obtained by using only one scrubber set.—(British Patent No. 240,224.)

DETERMINING THE QUALITY OF GAS

IN a recent paper that was read at the 48th Congress of the Vichy Technical Society in France, and which was reported in the Journal des Usines a Gas, there is described a method for determining the quality of gas. This method is dependent on the phenomena that accompany the extension of the flame of gas burners. A study was also made of these phenomena with the idea of applying the results so as to increase the safety of gas appliances.

The work was based on the application of the active force of explosive interruption of the burning gaseous flame. The author explains how it would be necessary to devise a special device which would produce and utilize the explosive force and this device could then be applied to gas appliances for the purpose of increasing the safety of their operation. A description of the device was given.

In applying explosive interruption of the gaseous flame to the determination of the quality of gas, the author considered the speed of the gaseous current which circulated in the apparatus and as well the speed of flame propagation on igniting the gas. Inasmuch as these two velocities are of opposite signs, if the first is predominant, at least in the orifice of the burner, the combustion is realized at the exit of the apparatus.

LIMITS OF INFLAMMABILITY AND THE CONTROL OF GAS MIXTURES

DETERMINATION of the limit of inflammability is recommended for controlling gas mixtures, e.g., mixtures of coal gas and water gas; either the upper or the lower limit may be used and the method is stated to be more accurate than the calorimetric methods. The proportions of two combustible gases in a mixture can be estimated by finding the limits of inflammability of the mixture in the air, given the limits of inflammability of the individual constituents.

If N_1, N_2, be the limits of inflammability, and n_1, n_2 the respective proportions of the gases, G_1, G_2, in a mixture containing x of the gas, G_1, and $(1 - x)$ of the gas, G_2, then $n_1/N_1+n_2/N_2=1$, and $x=N_1 (m - N_2)/m(N_1 - N_2)$, where m is the proportion of the composite gas in admixture with air at the inflammability limit. A modification of Mallard and Le Chatelier's method for determining the upper inflammability limit is described.

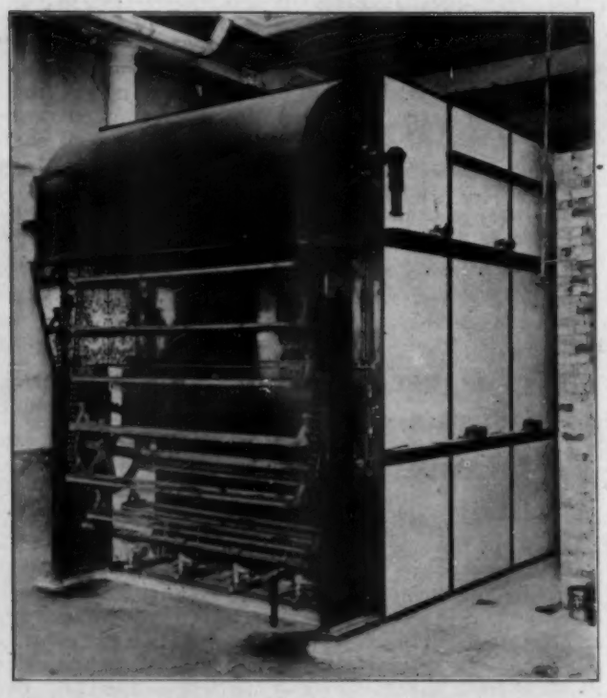
A known volume of air is passed by displacement from a burette by a definite head of water into a container of the gas under test; an ignition test is carried out and the proportion of air is altered until it is just sufficient to dilute the gas so that the test yields a positive result. Then $N = e\text{-}a/v$, where N is the upper limit of inflammability (m above), a is the quantity of air admitted, and V is the volume of the container.—(Soc. Tech. du Gaz; Gas J., 1925, 171, 394-395.)

INSULATION

(Continued from page 612)

way: More and more the trend in home heating is toward gas. Convenience, freedom from drudgery and economy are the forces back of this demand; economy of time—for gas is the instant heat; economy of labor—for gas eliminates the ash man and the furnace tender, the coal carrying and the soot and the dirt.

Gas is the modern fuel. Its cleanliness and the greater home comfort it makes possible appeal to the present day home owner. But gas cannot be sold in



Bake Oven Insulated with Cork Blocks

competition with other fuels where the home owners will not pay or cannot afford to pay a premium for such benefits as convenience, cleanliness and comfort. It is here that house insulation is of real value to the gas man.

Insulated construction removes gas for home heating from the luxury class and makes it available to the average home owner at a price that is well within the limits of his income. House insulation makes gas heating an economic possibility. You may question that statement, but I believe a concrete case, which will be cited later, proves it beyond a doubt.

Houses Not Reasonably Heat Tight

In the past, houses as they have been built prevent the entrance of rain, sleet and snow, but no real steps have been taken to make them reasonably heat-tight. And that is just why gas has been an expensive fuel. Houses of ordinary construction leak heat much as a sieve leaks water, which has meant that the householder could keep his house warm on cold winter days only by making more heat, i.e., burning more gas in the furnace. There was no way to conserve in houses of this type for any length of time the heat once produced. The result was that the cost of the gas necessary to keep the house comfortably warm was almost prohibitive. And from the standpoint of the gas man, such extravagant use of gas to maintain comfortable inside temperatures when outside temperatures fall, makes house heating business very undesirable, due not only to the variable load factor produced under ordinary conditions, but also to the very high peak send-out demanded on the few days that occur every heating season when abnormally low temperatures are accompanied by winds of high velocity.

Through the medium of heat-tight construction gained by the proper use of insulation all this can be changed. If houses are substantially built and their walls and roofs properly insulated, enough of the heat lost through ordinary construction can be saved to bring the cost of gas heating down to a point where it compares favorably with even the least expensive fuels. Insulation retards the outflow of the heat generated by the heating plant and holds a larger percentage of it in the rooms of the house. Since less heat escapes to the outside, less heat is required to replace the escaped heat and the entire house can, therefore, be held at a comfortable temperature on even the coldest winter days by burning but little more than the customary amount of gas in the furnace.

Corkboard

Corkboard, as its name implies, is manufactured wholly of cork, the bark of the cork oak tree which grows in Spain, Portugal and Northern Africa. The cork is ground up, screened to remove dirt and dust, compressed in metal molds into sheets of convenient size, and then baked. No binder is added to the cork since the baking liquefies its natural gum or resin, which cements the particles of cork tightly together. Cork under the microscope is seen to consist of thousands of tiny hollow air cells, each completely separated from the others. It is the hollow air cells of the cork that give to corkboard its high heat retarding value.

THE JOB AHEAD IN SELLING

(Continued from page 610)

tensive sales follow-up in conjunction with the national campaign?

To create a greater public acceptance of gas and gas equipment for domestic use means that the industry must reach the masses and classes with a popular story of a very definite and specific nature which will result in increasing sales volume locally.

Meeting Competition

If we are going to meet the competition developing from the highly organized competitive industries, we must do as they have done and use the tools whereby we can attain our objectives rather speedily and in the most efficient manner. In order to do this we have got to know what the competition is, where it hits us hardest and how it works. We have got to get together, work together and stick together, and not assume that to be practical is to be reactionary, and to be progressive is to be visionary. One of the greatest things we could possibly do would be to adopt a policy in our own gas company and in co-operation with all the dealers and distributors of domestic gas appliances in our local territories to handle no appliances except those meeting A. G. A. specifications and having been tested and approved by the A. G. A. laboratory. It is very difficult to sell this intangible idea such as a tested and approved appliance, but if we symbolize this test and approval by the A. G. A. laboratory with a trade-mark, we can readily popularize this symbol in the minds of the public. It would then represent a standard for appliances of highest quality, built according to specifications which assure safety, convenience and comfort to the domestic user. For example, let's visualize the symbol or trade-mark with a gold star. With the testing and approving of domestic appliances by the A. G. A. Testing Laboratory symbolized in the form of a gold star trade-mark, we are providing the dealer with something very definite and tangible which he can broadcast through various channels of advertising and publicity.

Standardization of Piping, Etc.

In addition to gold star tested and approved equipment, we should consider the establishment of a minimum standard of specifications for a typical local and modern residence gas installation with reference to house piping, the number, type and location of outlets for lighting and appliances, and the proper number and arrangement of flues. We should establish a minimum standard for the complete gas equipped home to assure the customer a convenient and adequate domestic gas service. This, too, ought to be symbolized or trade-marked as in the case of the equipment, and again I suggest the gold star as recently described in the No. 2 Bulletin of the A. G. A. Sales Service. This star might take the form of a five-pointed star, each point representing locally the five major gas appliances for which the local group may be desirous of creating a larger domestic market, leading to an increased sale of gas.

National Advertising

The problem of holding the present domestic gas load and of building greater gas sales can only be solved, in my opinion, through an organized local unit functioning as a part of a comprehensive national plan based on national advertising. Such a national campaign must of necessity be directed toward the increased sale of gas to each of the present consumers and each new consumer added to the lines. The most practical way to do this is to co-operate with all the manufacturers and provide the means to that end—first, through the appliance and then by maintaining and building greater interest in each appliance in order to hold the market up.

When people realize that the gold star is a nationally accepted standard for a home provided with a complete and convenient gas service, the expense involved on the part of the customer in meeting the local gold star requirements will represent a good investment which will enhance the real estate value of his home. It is only through national advertising that we can put over the gold star for a standard for appliances tested and approved through A. G. A. laboratory tests and for a complete and convenient gas service in the home. National advertising means more than a liberal amount of advertising space and publicity to stimulate for a time a certain amount of good will. It means that each individual manufacturer and gas company must consistently back up the statements made in the national advertising by promoting the sale of appliances meeting A. G. A. specifications and furnishing the public with good gas service in every sense of the word.

The Gold Star Trade-mark

By adopting a trade-mark such as the gold star, popularizing its use and making it a permanent national standard, we can through national advertising create an early public acceptance of the idea. To turn this public acceptance of the gold star idea into an actual demand for gold star service and appliances is the next step. The carrying out of the next step, which is the local sales follow-up, is the vital part in the success of the national campaign. The sales follow-up is strictly a matter of local organization. Enthusiasm can be stimulated in every community to the point of demanding gold star standards, through the co-operation of the plumbers, the architects, the builders and contractors, the gas company and all others in the community connected with the gas service or appliance business.

Through such a national campaign, composed of strong local co-operative organizations, the public will receive the benefit of better gas equipment and service by knowing what to demand and where to get it; manufacturers and dealers will sell more gas appliances; plumbers and builders will get more profitable business; and the gas company will sell more gas. In short, the domestic market for gas will be indefinitely expanded by popularizing gas usage in the home on a national basis.

This is the job ahead in selling.

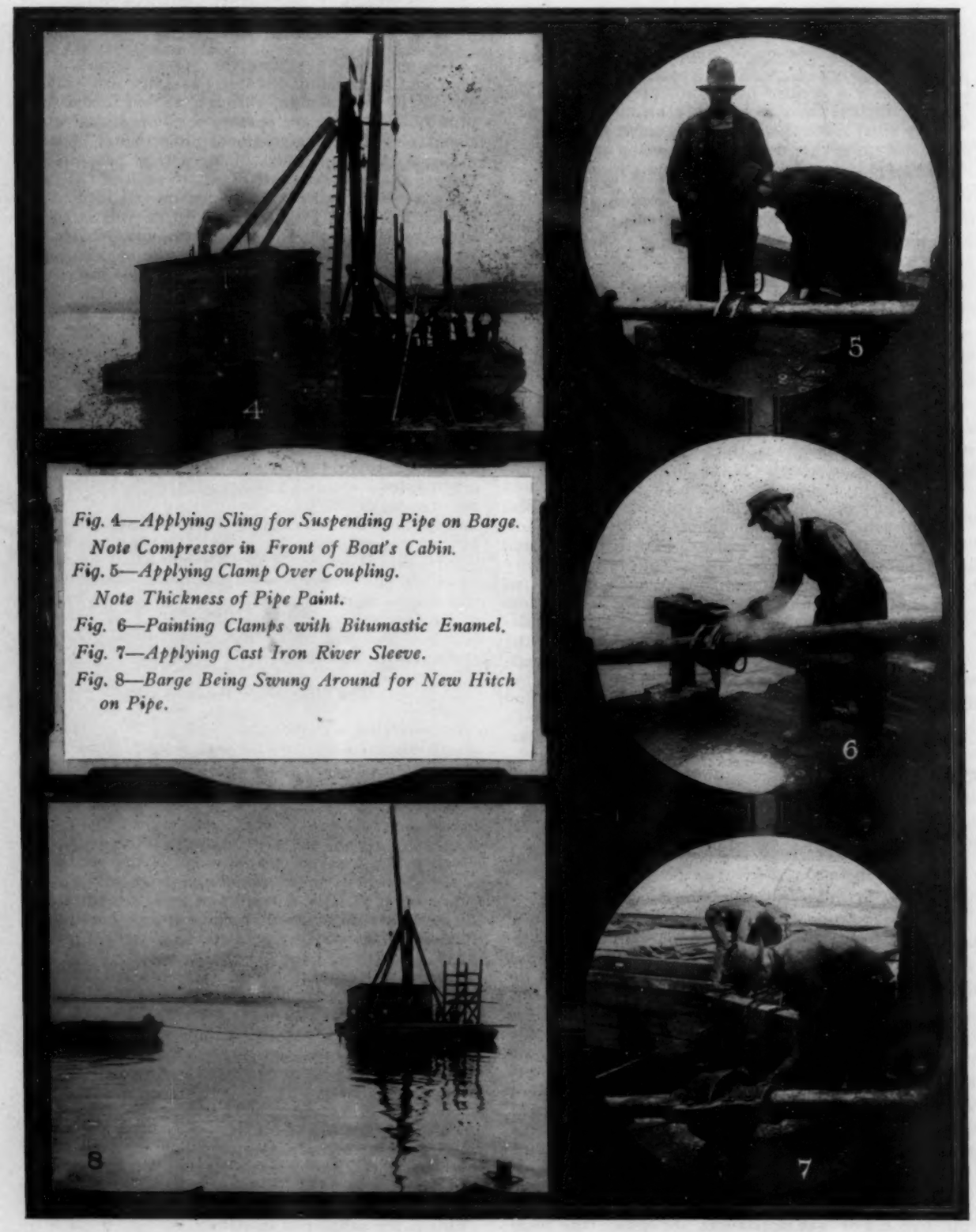


Fig. 4—Applying Sling for Suspending Pipe on Barge. Note Compressor in Front of Boat's Cabin.

Fig. 5—Applying Clamp Over Coupling. Note Thickness of Pipe Paint.

Fig. 6—Painting Clamps with Bitumastic Enamel.

Fig. 7—Applying Cast Iron River Sleeve.

Fig. 8—Barge Being Swung Around for New Hitch on Pipe.

(Continued from page 616)

thereto. The object of the bow is to allow enough slack in the river for settlement of the pipe in the river silt without placing excess strain on the land ends. The equipment for the river work consisted of a derrick boat, two small barges and a small oil engine driven tug boat.

The derrick boat was used as a dredge and operated with a clam shell bucket. The dredging to be done was as follows:

Digging the Trench

A trench 20 feet below low water or about 10 feet below the river bottom was dug for a distance out from pier head on Newburgh side toward channel 300 feet long and on the Beacon side 200 feet. This placed the pipe deep enough to avoid damage from future dredging at the docks. To ease up on the grade from the river inshore, a trench was graded from 20 feet below low water at the pier heads to 5 feet below street grade in a distance of 150 feet. In our case this gave an easy grade inshore. One barge was used as a supply boat, while the other was used to suspend the pipe and alter its elevation so as to line up the screw joints which were made up on the derrick boat.

The derrick boat was rigged with a high and low platform to take the incline in the pipe.

An analysis of laying strain indicated that there should not be an unsuspended length over 60 feet and the small barge, therefore, was used to add two more points of suspension in the line.

Conclusion

The entire project took a construction period of 10 weeks. The river line was laid in three weeks with the equipment as indicated and a crew consisting of an engineer, fireman, labor foreman and five men.

The derrick boat was anchored with four long lines with buoys and a pulling line for moving the boat along the routing of the pipe.

The line was put over the river with no accidents or trouble. The crew were put on a bonus system for all lengths of pipe over 8, and as a result about 11 double random lengths per day were laid, excepting in the trenched portion of the river, where the work was slower.

The work was handled by the Foundation Company of New York under contract and under the supervision of Mr. Frank Barris.

In conclusion, the writer wishes to express the appreciation of our company and himself for the help received and the many suggestions offered by many of the men in the gas industry.

The line is now in and it remains to be determined whether or not our judgment was sound in the specifications set up for its construction. One or two years of operation will reveal a great deal in establishing what is going to happen in the transmission of gas over one of the country's longest and deepest river crossings. We will endeavor some time in the future to give a full account of the operating problems that arise and how they were handled and with what result, in the hope that the industry may profit by our experience.

GIANT GAS FURNACE HEATS 2,500 POUNDS OF WIRE

A single gas-fired furnace which heats a ton and a quarter of steel wire at one time has recently been installed in an Eastern wire mill. It completes the gas-fired equipment by which this fuel is used for every heat process from the incoming steel rods to the finished wire.

In addition to the giant annealing furnace there are hardening furnaces, bake ovens and a gas-heated trough of molten lead, through which the wire is drawn for tempering. It is found that the use of gas heat reduces scale formed on the steel from 9 to 2 per cent.

Each heating unit in the mill registers its temperature in a central pyrometer room, in which there is also a regulating system whereby the temperature of any unit can be set and automatically held at the point desired.

New Ways for Eve to Please Adam

Apple and Raisin Pie — ask for the recipe.

EVER since the day Eve started it, mankind has succumbed to the lure of the luscious apple. Apple pie, apple dumplings and plump baked apples are proverbial in their appeal to husbands. Here are two new apple dishes that will win you smiles and compliments.

Apples in Maple Syrup

6 apples
1 cup maple syrup
1 cup water
2 tablespoons butter
¾ cup blanched almonds

Core apples and cut in half. Arrange in baking pan, insert nuts in apples with a knife, and dot with butter. Pour over syrup and water mixed. Bake until syrup thickens and serve hot or cold with whipped cream.

Serve apples in some way every day this Fall. Stop in and get a copy of our Apple Bulletin—choice recipes.

Baked Ham and Apples

1 slice ham, 1 inch thick
8 cloves
½ cup brown sugar
2 tablespoons butter
¾ cup chopped raisins
4 large tart apples
½ cup boiling water

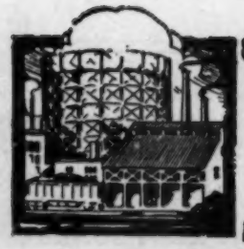
Stick cloves in fat of the ham. Place in a shallow baking dish and arrange around the apples, pared, cored and halved. Drop raisins in centers of apples, dot the whole dish with butter and sprinkle with the sugar. Add boiling water, cover and bake until ham is tender.

(Your Name and Address)

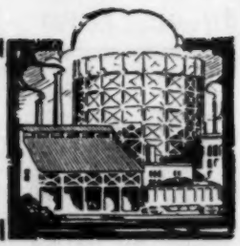
"You can do it Better with GAS"

A.G.A.-485

An Effective Appeal in a Gas Ad.



NEWS OF THE GAS INDUSTRY



Pacific Coast Gas Association

Northern California Holds Regional Meeting

The Pacific Coast Gas Association held its Northern California Regional Meeting in San Francisco on November 19 and 20. This meeting served a double purpose, as the entire day of the 19th was devoted to organization meetings of the association's committees, there being over 100 committee men in attendance at some dozen committee meetings held in various parts of the city. It also accorded an opportunity for a meeting of the board of directors and for the newly formed Committee on Gas Appliance Certification.

One of the most important topics considered by the board was the feasibility of holding an elaborate gas appliance exhibit in connection with the next convention of the association in Los Angeles next September. Complete plans for financing this exhibit were presented by B. S. Pedersen, chairman of the Gas Appliance Dealers Committee, and while no positive action was taken by the board, the matter was placed in the hands of a competent committee to study Mr. Pedersen's plans and to report upon their feasibility. The exhibit, if held, will be open to the public, as it is confidently predicted that the display will be inspected by several hundred thousand persons.

Gas Appliance Manual to Be Printed

The board also approved the printing of a gas appliance manual upon which a committee of the association has been working for more than two years. This manual will be printed at once and sold to members of the association at cost.

Final decision on the model gas ordinance which has been prepared by a committee of the association was withheld until the next meeting of the association, which will take place in San Diego some time in February.

On November 20 a general program, which compared favorably with any recent convention programs, was presented to all association members. E. L. Hall, general superintendent of the Portland Gas and Coke Company, read a paper which contributed to the study being conducted by the Pacific Coast gas companies on the feasibility of converting part of their gas producing plant to coal gas or water gas.

High Pressure Distribution

A. F. Bridge, executive engineer of the Southern Counties Gas Company, described what his company is doing in increasing the load factor of its long transmission lines by the installation of high pressure storage stations at strategic points.

H. T. Terry, of the Pacific Gas and Electric Company, described the accounting methods necessary in handling a large scale instalment sales campaign of appliances.

E. G. McCann, personnel manager of the Pacific Gas and Electric Company, told of the trend in large corporations towards definite methods of recruiting their personnel.

The Commercial Section presented a paper by Harry L. Warren, sales engineer of the Southern California Gas Company, describing the many very large gas-fired heating systems being installed in the city of Los Angeles. Probably nowhere else in the country is gas heating conducted on such a large scale.

On the evening of the 20th an informal dinner was held at the Commercial Club, for which a special program of entertainment had been prepared by Frank Talcott, San Francisco sales manager of the Pacific Gas and Electric Company.

W. H. Blauvelt Chosen City Gas Expert

Philadelphia, Pa.—W. H. Blauvelt, chemical and metallurgical engineer, has been selected to head the Gas Commission in the drafting of a new lease of the city's gas plant to the United Gas Improvement Company. The expert was named in a message to Council from the Mayor, inclosing a report of a sub-committee of the commission.

Mr. Blauvelt, a graduate of Lafayette College, is to receive a retainer of $1,000 and his compensation will be $150 a day in addition to expenses.

While the present lease with the U. G. I. does not expire until the end of 1927, the Mayor wants the new lease disposed of to relieve the pressure of important projects in hand.

He wants a lease that will be satisfactory to the taxpayers and fair to the gas company lessee. For that reason the expert is called in to guide the Gas Commission through the technicalities of the gas manufacturing business, value of machinery, costs of production and distribution.

Sacramento Gas Co. Sold

Sacramento, Calif.—The sale of the Sacramento Gas Company, which has a plant and wells here and a plant in Lodi, to E. H. Rollins & Sons, investment brokers of San Francisco, has been announced.

While the price was not announced, it is known the deal involved a valuation of $1,468,844.89 upon the gas company. It is one of Sacramento's largest industries.

Mary E. Dillon Returns From Europe

Welcomed at a Testimonial Dinner

Coney Island on Wednesday evening honored Miss Mary E. Dillon, vice-president and general manager of the Brooklyn Borough Gas Company, at a testimonial dinner by the Coney Island Chamber of Commerce at the Hotel Shelburn, Brighton Beach. Miss Dillon is a member of the executive committee of that organization.

The affair was in the nature of a "welcome home," as Miss Dillon has just returned to New York aboard the S.S. Aquitania. Miss Dillon spent the past six weeks in Europe, where she combined study with pleasure. While on the continent, Miss Dillon visited several of the utility corporation plants, with the object in mind of comparing American and European operating methods.

Mary E. Dillon

Miss Dillon is considered one of the most remarkable officials in American industrial life today. Twenty years ago she was an "office boy." By sheer ability, remarkable grasp and a penchant for facts, she has become the active head of one of the largest public utility corporations in the metropolitan area. Indeed, she is looked upon as an authority in her field of endeavor.

When Coney Island commenced to realize that its day of wooden structures was at an end, Miss Dillon set architects to work with orders to plan a handsome building, colonial in design, for her company's future home. In less than a year after her orders were given the building was completed and as a result the resort has one of the most beautiful public utility structures in America.

Miss Dillon has always been a pioneer. She has made her company and patrons both realize that their welfare is mutual. Always she has driven home the idea that a public utility can best serve its own and its patrons' best interests when it is in healthy financial condition, and when it is progressive.

Endeavoring to prove that her company is part of the vital organism of the community, it is Miss Dillon's policy to co-operate with local organizations to raise money for worthy enterprises. For example, if a church, synagogue, community center or charity needs financial assistance, the gas company does its share by giving a benefit entertainment or dance. This keeps morale to the sticking point and incidentally keeps the gas company close to the hearts of the community. Because her organization is a corporate enterprise does not mean that it isn't a "human" institution.

Miss Dillon is a member of the board of directors, Coney Island Chamber of Commerce; the board of directors, American Frugality League; Professional and Business Women's League; Women's Engineering Society of London; Brooklyn Chamber of Commerce; Vermont Society; secretary of the Coney Island Carnival Co., Inc.; and chairman, Women's Section, Empire State Gas and Electric Association.

The Speakers

The speakers at the dinner were Dr. Philip I. Nash, toastmaster; Edward M. Bassett, Henry M. Brundage, Travis H. Whitney, Jennie McMahon and Judge William L. Ransom.

The committee in charge of the testimonial included: William C. Meinch, chairman; William J. Avitable, Stephen F. Barrera, Herman Bergoffen, William Billharz, Dr. Alexander Boecker, Thomas J. Cox, Samuel Deitch, Harry Dillon, Alfred Feltman, Charles L. Feltman, John J. Grady, Sam W. Gumpertz, Burt G. Lewis, John J. Loftus, William F. Mangels, Jennie McMahon, Dr. Philip I. Nash, Robert Sangunitto, Joseph J. Sartori, William Selleck, Milton A. Siegfried, Louis Stauch, Helen Smith Steers, Agnes Stephenson, Edward Stratton, Leslie C. Stratton, Edward F. Tilyou, William J. Ward and Travis H. Whitney.

FATHER AND SON TRIP

David C. and Jacob B. Jones Off for First Vacation Together in Twenty Years

For the first time in a generation Jacob B. Jones and his father, former Councilman David C. Jones, are off on a vacation trip together. The father of the superintendent of the Bridgeton Gas Light Company has put in so many long hours with the Bridgeton Pleasure Boat Company until he retired last summer that the trip is their first one together in 20 years.

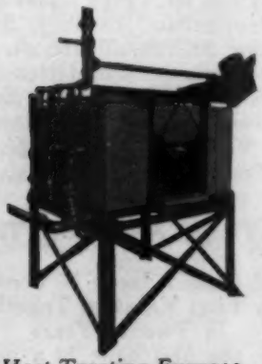
They sailed from New York for Bermuda for a 10-day trip. The senior Mr. Jones will study plants and flowers while there, with a view of adding to the beautification of the city park, of which he is superintendent. His interest in this is entirely personal, however, as he is not representing the city, but taking a purely private vacation trip.

Claus Automatic Gas Cock Co. Building New Plant

The Claus Automatic Gas Cock Company, Milwaukee, Wis., manufacturers of gas cocks, valves and controlling units, are building a new plant which will triple the size of their present plant. The new plant will be equipped with the latest type of apparatus for the manufacture of their product. This company has had a steady and continuous growth during the past 15 years in which they served the gas industry.

Gas Fired Controlled Industrial Furnaces

The gas-fired furnaces manufactured by Sweet & Doyle Foundry & Machine Company, Troy, N. Y., are of the direct-indirect fired type. These furnaces, while of the direct-indirect fired type, are combined with down drafting, the gas and air mixtures being induced through Sweet & Doyle gas burners and proportional control valves slightly under the furnace roof and behind protecting baffles mounted on the combustion chamber walls. Heat generated in these combustion chambers is spilled against the roof of the furnace and down drafted to the hearth.



Heat Treating Furnace

The products of combustion are taken out through cross ducts leading from the hearth to the longitudinal flue, discharging at the back of the furnace. This method of gas application and circulation insures at all times a uniform hearth temperature.

The control valve employed is of the sliding-rotating type and eliminates the human element that enters into the control of gaseous fuels. When the rotating gas end is set for the particular kind of gas to be burned and the air end set for volume and pressure, the valve becomes a sliding one valve that will give constant and unvarying results.

The principle employed in building these furnaces makes them adaptable to any and all industrial applications, but we wish to emphasize the fact that we do not believe it possible to build a standard line of furnaces that can be carried in stock and shipped as one would the ordinary run of merchandise.

McWane Cast Iron Pipe Co. Opens New Chicago Office

The McWane Cast Iron Pipe Co. has announced the opening of an additional sales office in Chicago. It is located at 208 So. LaSalle street, in the Continental and Commercial Bank building, with Mr. Shirley W. Harris as manager of the Chicago sales office.

Contracts Awared

Materials for the additional lift to the present 50,000 holder for the Lockhaven Gas & Coke Company of Lockhaven, Pa., have all been shipped and the erection of this apparatus will start at an early date. This contract is being executed by the Western Gas Construction Company, Fort Wayne, Indiana.

Materials for the 100,000 cu. ft. gas holder for Bennington, Vermont, and the 100,000 cu. ft. gas holder for Brattleboro, Vt., for the Twin State Gas and Electric Company of Boston, Mass., are now going forward and erection of this apparatus will start at an early date. This contract is being executed by the Western Gas Construction Company, Fort Wayne, Ind.

The U. G. I. Contracting Company of Philadelphia has been awarded contract by the Hartford City (Conn.) Gas Light Company to furnish and install an 11 foot U. G. I. cone top carburetted water gas apparatus with the necessary auxiliary equipment.

With the apparatus there will also be installed the U. G. I. Model "B" automatic control, the U. G. I. thermo control and connections for the use of exhaust steam in the generator.

In order to meet the increased demand of its territory, the Orange County Public Service Corporation has arranged with the U. G. I. Contracting Company, Philadelphia, for the installation of additional equipment at the Middletown, N. Y., plant. This will include the installation of the 7 foot U. G. I. water gas set, together with the necessary auxiliary equipment.

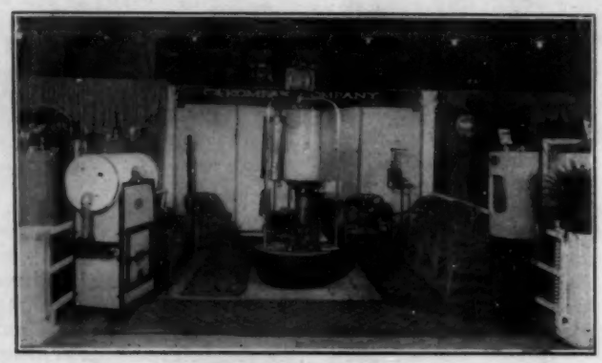
This apparatus will greatly increase the daily capacity of the Middletown plant.

The Kompak Exhibit at Atlantic City

The exhibit of the Kompak Co., illustrated here, consisted of a novel revolving stand, upon which were placed a stock Kompak heater, a washstand and a section of the copper boiler and coil.

The stand revolved at the rate of about one revolution per minute and is it revolved hot and cold water could be drawn at the faucet and the gas burned in the heater, thus operating just the same as the though stationary in the house.

In addition to this exhibit, which occupied the center of the booth, a Kompak Type "S" heater was exhibited, together with a demonstrating outfit to show in detail the operation of the thermostat, burner and the automatic pilot.



The Kompak Exhibit

John D. McIlhenny Passes Away

John D. McIlhenny has passed away as the result of a heart attack three weeks ago. He is survived by his widow, who was Frances Galbraith Plumer, to whom he was married in 1898. He is survived also by a son, John D. McIlhenny, Jr., who is in his father's business, a daughter, Bernice McIlhenny, who graduated from Smith College last spring, and a son, Henry Plumer McIlhenny, a student at the Episcopal Academy. He is also survived by two sisters, Mrs. H. S. P. Nichols and Miss Selina B. McIlhenny, and a brother, Francis S. McIlhenny, all of Philadelphia.

John D. McIlhenny was born in Columbus, Ga., on October 7, 1866. His father, who was an engineer, had gone to Columbus from Philadelphia a few years previously to construct the gas works there and had remained as superintendent of the company and as a partner in one of the early cotton mills of the South.

In 1876 Mr. McIlhenny's father returned to Philadelphia as a partner in the firm of Helme & McIlhenny, manufacturers of gas meters, at the corner of Juniper and Cherry streets. John D. McIlhenny graduated from the Philadelphia High School in 1885 and entered business with his father, with which he was connected at the time of his death. Mr. McIlhenny early saw the possibilities of development of the gas and electric business and many years ago took over the ownership or management of various public utility companies.

Although he retired from the more active management of these companies some years ago, he was at the time of his death still interested as owner or director in a number of companies. At the time of his death he was a member of the firm of Helme & McIlhenny of Philadelphia, director of the Portsmouth, Va., Gas Company, Washington, D. C., Gas Light Company, Counties Gas and Electric Company, Saving Fund Society of Germantown and other companies.

At the time of his death he was president of the Pennsylvania Museum and School of Industrial Art, a trustee of the Fairmount Park Art Association, director of the Art Alliance of Philadelphia and a member of the Rittenhouse Art, Union League, Philadelphia Cricket, County and Sunnybrook Golf clubs. He was also president of the board of trustees of the Summit Presbyterian Church, Germantown, and president of the Pennsylvania Scotch Irish Society.

Mr. McIlhenny had made a fine collection of art objects. A portion of his home in Germantown is in the form of an art gallery and in it are contained many of his choicest pictures and examples of early furniture and silver. His home is an excellent example of what can be accomplished in the way of art objects in the setting of a private home and has been constantly visited by collectors, museum curators and art students.

Sale of Gas Company Confirmed by Court; Plan Reorganization

The sale of the Lenawee County Gas and Electric Company to a committee representing its bondholders at the receiver's sale for a consideration of $300,000, has been confirmed in Detroit by George A. Marston, referee in the United States District Court in bankruptcy. Through an agreement between the bondholders' committee and the Henry L. Doherty Company, the property is to be sold to the Doherty organization after a new operating corporation has been formed.

Under a court order, the plant is to continue under the management of the Detroit Trust Company until the new operating company has been formed and has taken over the property. The Detroit Trust Company has been in charge of the gas plant since receivership proceedings were begun in January of 1923.

D. E. Byerley, manager of the old Lenawee County Gas and Electric Company, said today that improvements needed for the gas plant quite likely will cost more than $100,000, depending upon the type of equipment the Doherty engineers decide is needed. He pointed out that the Doherty organization will order such equipment as is needed to furnish adequate service to its patrons and that possible future growth of the city will be provided for.

He emphasized the point that the new equipment will provide an adequate supply of gas to take care of industrial requirements, pointing out that some of the manufacturers using gas in their plants have been forced in the last few years to install oil burning equipment when it was found the gas supply was not sufficient for their needs and for residence consumption as well.

When the incorporation of the new company is completed, the next step will be the determination of rates. The franchise of the Lenawee County Gas and Electric Company was sold at the receiver's sale last week to Henry Wing for $5, the sale being only a formality to dispose of it. With the receivership proceedings ended and the sale of the property to the new corporation, the Lenawee County Gas and Electric Company will be dissolved. Thus the new operating corporation will have no franchise legalizing its use of the city streets for its mains until an agreement is made with the city.

Gas Company's Tar Department Celebrates

Denver, Col.—The Crown Tar Works is an adjunct of the Public Service Company of Colorado. Thursday, November 12, found the officers of the tar department and its local jobbers at the banquet table in the Shirley-Savoy Hotel, Denver, Col., about 400 plates laid.

The large hall was decorated to resemble the deck of the steamship "Tarling," and she was bound for Treasure Island. The chest was found and therein was something nice for all who made the voyage.

The affair was in charge of George McDermand, manager of the tar works, and Bert Thompson, his assistant.

C. A. Semrad, commercial manager of the company, gave a talk, a regular "jolly tar," and then there was music, dancing, singing, the whole evening just one of great joy.

Twinkle, twinkle, little Tar;
Boiling, sizzling, in the pot—
Believe me, you're a bi-product
That brings "mazuma" in a trot.

Contracts Awarded

The Central Indiana Gas Company of Muncie, Ind., has placed contract with the Gas Machinery Co. of Cleveland, O., for a nine-foot carburetted water gas apparatus, complete with overhead brick operating floor, turbo blower, air and steam meters, explosion check valve and automatic control.

The contract also includes a 9x23-foot water tube condenser, complete with gas connections, yard piping and other auxiliary equipment.

A new building is being erected for the water gas set and space for a future duplicate set is provided and generator fuel handling equipment is being installed.

New boiler plant with water softening equipment is also being installed, with new building for same.

The Northern Indiana Gas & Electric Company of Fort Wayne have placed an order with the Western Gas Construction Company to install an automatic charger and weighing device at their new plant.

The Interstate Public Service Company have just placed in operation the new water gas set which they have installed at their plant at Newcastle, Indiana. The contract for this work was executed by the Western Gas Construction Company, Fort Wayne, Indiana.

In order to augment the gas supply of Buffalo, New York, the Iroquois Gas Corporation has determined upon the installation of a comprehensive plant equipment for the manufacture of carburretted water gas and have executed contract with the U. G. I. Contracting Company of Philadelphia for the installation.

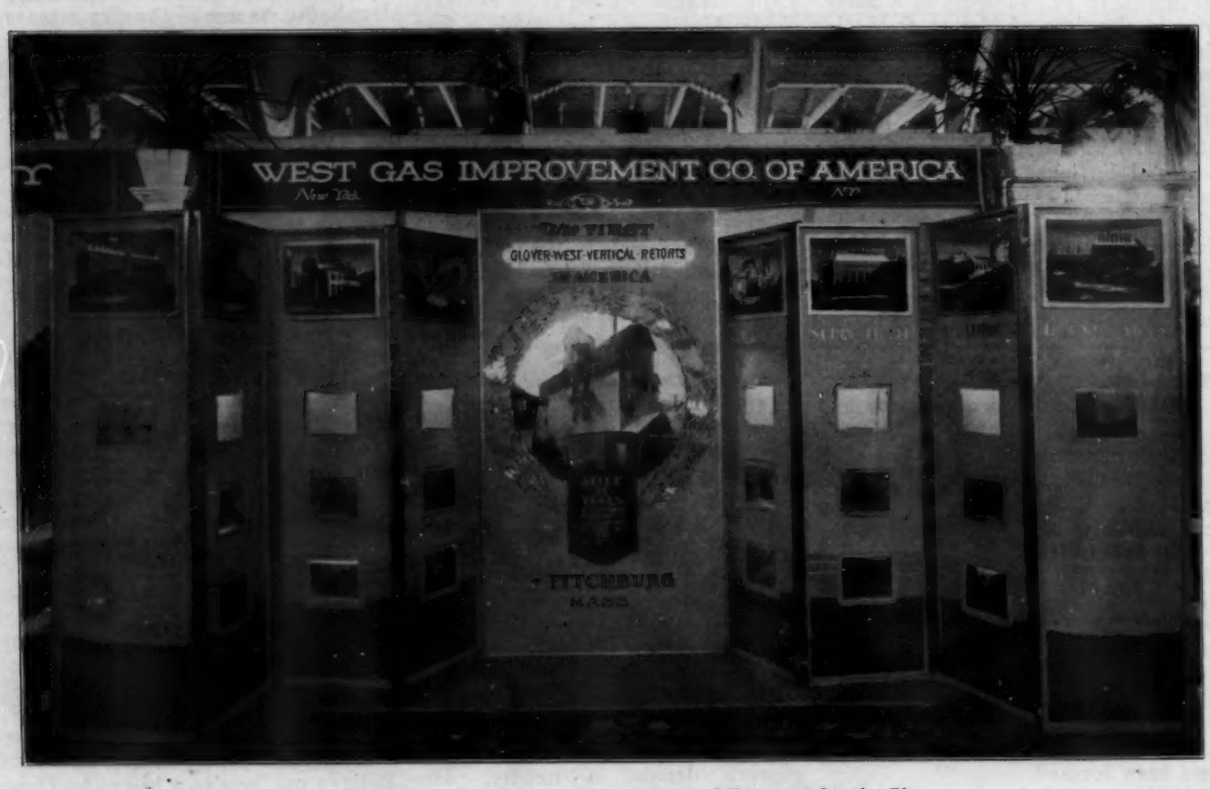
West Gas Booth at Recent Convention

The exhibit of West Gas Improvement Company, builders of Glover-West vertical retort plants for continuous carbonization, was an artistic illuminated panelled display of various plants of this type.

The central panel contained an enlarged photograph cut out in silhouette of the first installation built in America — Fitchburg, Mass.

On the extreme left of the exhibit the 9,000,000 cubic feet Glover-West plant at Montreal, the largest vertical retort plant of any type in America, was shown and at the extreme left was illustrated that which when completed will be the largest vertical retort plant in South America, namely, the 3,500,000 cubic feet installation in hand for Buenos Aires. It was to be noted also that a 3,000,000 cubic feet plant is also in hand for Santiago, Chile.

Intermediate panels illustrated Toronto, Ont., a 4,500,000 cubic feet plant; Malden, Mass.; Portland, Me.; Pawtucket, R. I.; Springfield, Mass., and Watertown, N. Y.



The West Gas Improvement Co. Exhibit at Atlantic City